User’s Manual

IcoreView

English

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Technical Support
Tel: 0086-21-54481280
Customer Service: sales@suntelecommunication.cn
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Introduction

Manual Instruction

This is <**SUN Telecom** EPON Network Management System Operation User's Manual>, this manual is applicable to the EPON equipment with the SUN Telecom Network Management System. This manual is used for equipment setting instruction. Please read me before operation.

Conventions

1. Command Description Convention

When this manual is introducing the usage of the commands, it might use one or several text format as below to express particular description:

Format	Description
Bold	Refers to command line keyword (remain unchanged part of the command, must input accordingly)
|	Used to separate several options, indicates that select from two or more options.
[]	Indicates that the content in the "[]" is optional during command configuring.
[x|y|…]	Indicates that select one or not from two or more options.
<*A.B.C.D*>	Indicates that the user needs to input the IP address.
<*A.B.C.D/M*>	Indicates that the user needs to input the IP address, and it is allowed to designate subnet mask with parameter "M", "M" is referred to the bit of the subnet mask.
<n-m>	Indicates the allowable value range

2. Graphical Interface Convention

Format	Description
＜ ＞	"＜ ＞" indicates the button name, such as "click <OK> button".
[]	"[]" indicates windows name, menu name and datasheet, such as "pop up [open] window".
/	Multilevel menu is separated with "/", for example: [system/exit] indicates the [exit] option under [system] menu list.
➢	➢ After this is explanative and illustrative content.

→	The simple operation procedure is linked with“→”, such as “OLT→essentiainformation→enable”, it means select OLT menu first, then the essential information, and the click the enable button in essential information.

3．Content Introduction

Chapter	Content
Chapter 1 Product introduction	EPON product interview、features and introduction of network management.
Chapter 2 Config the system parameter of the network management card	Change the IP address, Alarm address and system information
Chapter 3 EPON network management software	Install, uninstall and enable the software
Chapter 4 EPON network management software config	Network management software config, OLT config and ONU config.
Chapter 5 Bridge mode config	Bridge mode and config process
Chapter 6 Examples	Configuration examples

Catalogue

Chapter 1 Product Introduction 1
1.1 Product Interview 1
1.2 Interface and Indicator Light 1
1.3 Management Card Cable Connection 2
2.1 Config Preparation 3
2.2 Login Network Management Card Config 3
2.2.1 Telnet Login Network Management 3
2.2.2 Login network management by Console interface 4
2.3 Config the System Parameter of Management Card 5
2.3.1 Command Format 5
2.3.2 Config examples 5
2.4 Config Examples 6
3.1 Installation 7
3.1.1 Server 7
3.1.2 Client 7
3.2 Enable EPON network management software 8
3.3 Close EPON Management Software 9
Chapter 4 EPON Network Management Software Config 10
4.1 Configuration Introduction 10
4.1.1 Login network management client 10
4.1.2 Configuration Interface Introduction 10
4.1.3 Change User Password 11
4.2 Basic Configurations 12
4.2.1 Add device 12
4.2.2 Two ways to check 17
4.2.3 Update topology 18
4.2.4 Check the Device Rack 19
4.2.5 Description of the Device Icon 20
4.2.6 Alarm Management 20
4.3 OLT Configuration Management 21
4.3.1 OLT Basic Information Management 21
4.3.2 OLT Config 25
4.3.3 OLT Uplink Port Config 26
4.3.4 OLT Bridge Parameter Config 27
4.3.5 OLT Senior Management Config 28
4.4 ONU Config 28
4.4.1 ONU Link Management 28
4.4.2 ONU Hardware Config 28
4.4.3 ONU Config 32
4.4.4 ONU 802.1x Management 38

Chapter 1 Product Introduction

1.1 Product Interview

iCoreView is a **SUN TELECOM**'s independent R&D EPON Network Management System based on SNMP V2c protocol, and it's compatible with SNMP V1. iCoreView adopts powerful management capability; the staff in control center can monitor, manage and maintain EPON system in different places. iCoreView made the network stable.

iCoreView provides operative and administrable interface, the features are:

- Support Performance Management, Malfunction Management, Alarm Management, Safety Management, and real time monitoring.
- Provide reliable safety strategy, support multilevel user rights
- Adopt hierarchical architecture, easy to operate
- Support remote management and maintenance
- Support several Trap management modes, support Trap Email distribution and Trap short message notification, help the management staff know the condition of the device and the network in time, ensure the stability of the network.
- Perfect log management, record detailed log information during operation and maintenance, ensure the safety of management and operation
- Up-to-date edition supports Chinese and English
- iCoreView adopts C/S architecture, composed of server and client

1.2 Interface and Indicator Light

There is one RJ45 port and one Console port on the Network Management card, RJ45 port connects with the PC network port, Console port connects with the PC Console port by serial line:

Table1-1 Indicator Light Status

Indicator Light	Status	Specification
RUN	Blink	The management card is normal
	Off	The management card is not running.
FANA	On	The right power fan is normal
	Off	The right power fan stops

FANB	On	The left power fan is normal
	Off	The left power fan stops
PWRA	On	The right power supply is normal
	Off	The right power supply is off
PWRB	On	The left power supply is normal
	Off	The left power supply is off
FDX	On	The full duplex is on
	Off	The half duplex is on
PWR	On	The power supply of the chassis is normal
	Off	The power supply of the chassis is not normal
10M	On	RJ-45 port is under 10M mode
	Off	RJ-45 port is under other modes
100M	On	RJ-45 port is under 10/100M mode
	Off	RJ-45 port is under other modes

1.3 Management Card Cable Connection

The EPON management card should be in the leftmost slot of the chassis (3U), the cable connection is shown as Figure 1-1, and both two connections in Figure 1-1 are OK.

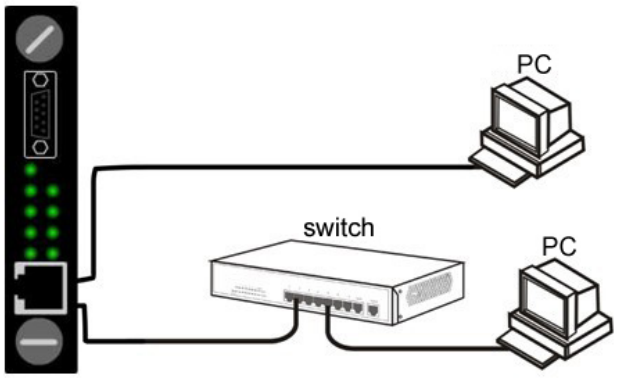


Figure 1-1 Cable Connection between PC and Management Card

Chapter 2 Config the system parameter of the management card

2.1 Config Preparation

supposed the user has inserted the management card in the right place of the chassis, and has finished the cable connection. Before the config, the user's PC has to meet some basic config demand.

1. **User PC**

   - Operation system (Windows 2000/XP/Vista/Win7)
   - Install the management agent card

2. **Establish correct network configuration**

   - For local config, the IP address of the PC and EPON management card must be in the same subnet; for remote config, the PC and EPON management card must be reachable through router. The default IP address of EPON management card is: 192.168.0.88, Mask is: 255.255.255.0
   - Connect the RJ45 ports of the PC and EPON management card by UTP cable or through switch. After positive identification, power on the device.

2.2 Login Network Management Card Config

2.2.1 Telnet Login Network Management

Click "start/run" of the PC, see the dialog box, and input telnet 192.168.0.88 in "open", shown as Figure 2-1

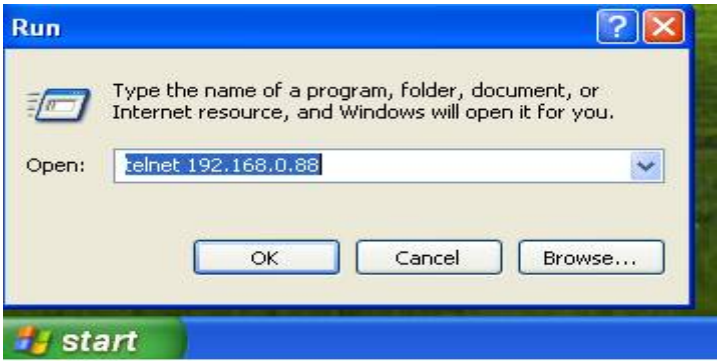


Figure 2-1 Telnet Login

Click <OK>, see the Telnet login interface, shown as Figure 2-2, input the user name and the password (for first login, input default username: root, password: snmpman), then push the enter button, enter the telnet command line config interface, then see the command prompt `root@sun (/)#`, indicates successful login.

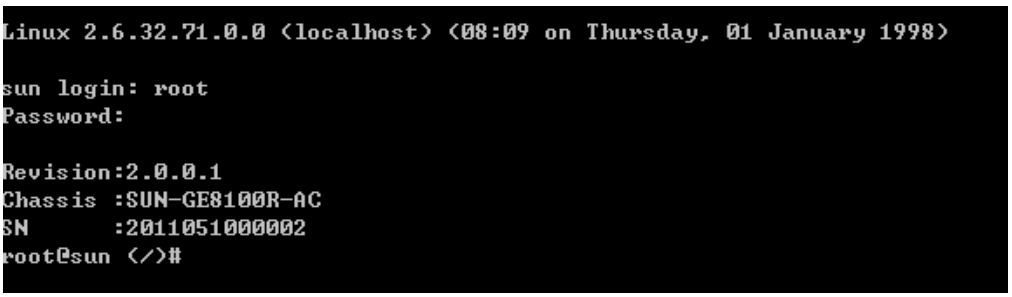


Figure 2-2 Telnet Login Interface

- EPON network management card allows only one user to login in the same time.
- No operations would display on the screen when you input the password, just push enter key after the input.
- Push Ctrl+Backspace to delete; only Backspace wouldn't work.

2.2.2 Login network management by Console interface

It supports config the network management card by HyperTerminal if the card IP address is unknown. Connect the Console port of the PC with the Console port of the management card with RS232 serial line, and then run the HyperTerminal (start-program-accessories-communication-HyperTerminal) . Need to input area code, phone number and other related information for the first login, and then click<OK> to next step, input 'SUN Telecom management card' in "tag" under [connection description], click "OK", to [connect to…], click "OK", to [properties], click <restore to default>, then select 115200 in "bit per second", click "OK", then to [hyperterminal], input enter, see the `root@sun (/)#` .

2.3 Config the System Parameter of Management Card

2.3.1 Command Format

```
Revision:2.0.0.1
Chassis :SUN-GE8100R-AC
SN      :2011051000002
root@sun (/)# sysconf ?
Usage:
    sysconf                          *Display configuration of system.
    sysconf ip <ip_address>          *Setup nms ip x.x.x.x
    sysconf netmask <ip_mask>        *Setup nms netmask x.x.x.x
    sysconf gateway <ip_address>     *Setup nms gateway x.x.x.x
    sysconf mac <mac_address>        *Setup nms mac x.x.x.x.x.x
    sysconf hostname <string>        *Setup nms hostname abc
    sysconf trapenable <1/2>         *Setup snmp trap enable 1 or disable 2
    sysconf trapip <ip_address>      *Setup snmp trap v2 destination ip x.x.x.x
    sysconf community <string>       *Setup snmp trap community abc
    sysconf location <string>        *Setup nms location information
    sysconf contact <mail_string>    *Setup snmp contact mail
    sysconf hostip <ip_address>      *Setup olt nms host ip x.x.x.x
    sysconf oltip <ip_address>       *Setup olt nms olt ip x.x.x.x
    sysconf hostport <port_num>      *Setup olt nms host port x
    sysconf oltport <port_num>       *Setup olt nms olt port x
    sysconf revision <verion_string> *Setup Revision x.x.x.x
    sysconf chassis <chassis_name>   *Setup chassis name HA7000
    sysconf sn <sn_string>           *Setup manufacturer serial number yyyymmddn
nnnn
```

Use sysconf to show the system basic information; use sysconf ? to see the help information as below:

The primary command format of management card is shown as Table 2-1:

Command format	Description
sysconf	Show system basic information
sysconf ip	Config agent card IP address
sysconf trapip	Config agent card alarm address
sysconf trapenable	Enable the alarm function
sysconf info	Config the system information
reboot	Reboot the agent card

OLT host ip should not be in the same network segment. Eg, default host IP is 192.168.1.100, in the 在 192.168.1.× network segment; for agent card IP is 192.168.0.88, in 192.168.0.× network segment.

2.3.2 Config examples

```
root@sun (/)# sysconf ip 192.168.10.10
```

Config the agent card IP address: 192.168.10.10, alarm address: 92.168.10.11; as below:

- In config windows: Input **sysconf net** and push enter
- Display IP address: Input the IP address and push enter
- Display Net mask: Input subnet mask and push enter
- Display Gateway: Input gateway and push enter
- After the prompt message, input y and push enter to change the Host name..

Host Name Config:

- In config windows: Input **sysconf host** and push enter
- Display Host name: Input the name and push enter
- After the prompt message, input y and push enter to change the Host name..

Trap config

- In config windows: Input **sysconf trap** and push enter
- Display Trapenable: Input 1 or 2 and push enter, 1 for enable, 2 for disable
- Display Trapsink: Input the first trap address and push enter
- Display Trap2sink: Input the second trap address and push enter
- Trapcommunity: Input trap type and push enter, it is snmptrap here
- After prompt message, input y and push enter to change the trap address

System Information Config:

- In config windows: Input **sysconf info** and push enter
- Display Syslocation:： Input the address info and push enter
- Display Syscontact: Input the contact and push enter
- After the prompt message, input y and push enter to change the info

---

- In prompt message, y stands for OK and save, n stands for cancel.
- Restart the management card to enable the config

2.4 Config Examples

Config the IP address: 192.168.10.10, Net mask: 255.255.255.0; Gateway: 192.168.10.1; Trapsink: 192.168.10.11; Other info: default. Enter telnet or Console windows, the config process is shown as Figure 2-3:

```
root@sun (/)# sysconf ip 192.168.10.10
root@sun (/)#
root@sun (/)#
root@sun (/)# sysconf ip 192.168.11.130
root@sun (/)# sysconf trapip 192.168.11.131
root@sun (/)# sysconf trapenable 1
root@sun (/)# reboot
```

Figure 2-3 Config Process

After config, input reboot and push enter to restart the management card, and then config would be enabled after the restart.

Chapter 3 EPON Network Management Software

3.1 Installation

The EPON management software is a compressed file.

1. There is disk will be sent together with the EPON products. The EPON software EPON_2.0.0.7.rar

(

, 2.0.0.7 is the version) is in the disk, decompress it. The install path should be English, no Chinese. After decompression, there is below contents in the objective directory:

MySQL5 is the folder for mysql database

Client is the folder for client end

Server is the folder for the server

Operating Instructions.txt is the introduction of installation

2. Install MYSQL database. It is convenient to install MYSQL, we supply an automatically installation programme regmysqlservice.exe, after decompression, users can find this programme under the directory of MYSQL5, users just need to run one time the MySQL5\regmysqlservice.exe, then the MYSQL data base is installed successfully. Then EPON software is installed successfully.

3.1.1 Server

EPON management server supports to collect the information of the OLT racks, and centralized supplying services to the user ends.

3.1.2 Client

Client end supports to manage the OLT cards and ONUs, detail functions as below:

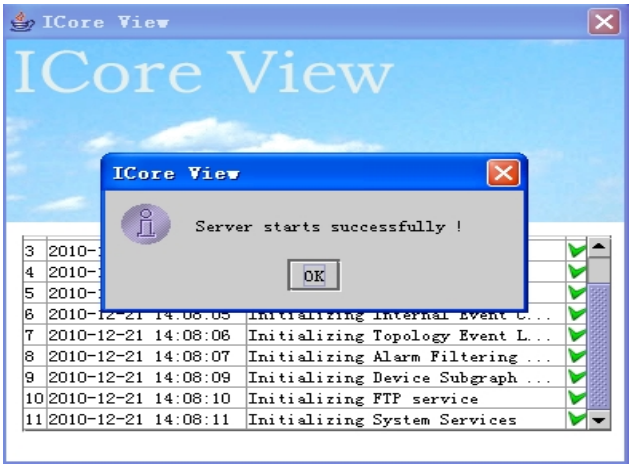
- User management: add, delete and modify users. Set different authorities to different users, so to implement decentralized management to the users.
- Agent management: add the agent information of the rack, so to browser the operating information of the rack and the alarm information.

- Alarm query: set the agent card TrapLInk pointing to server IP address, all the login server client can get the current alarm information, and check the history information.
- Device management: manage OLT cards and ONUs
- Alarm management: manage history alarm information and use current alarm information to cut the network operating status.

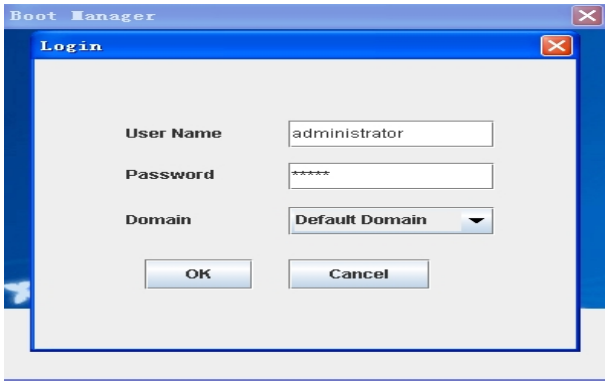
3.2 Enable EPON network management software

EPON network software consists of server and client, before using the client; need to enable the server firstly.

Enable the server: run server\RunServer.exe


ICore View
ICore View
ICore View
Server starts successfully !
OK
3 2010-
4 2010-
5 2010-
6 2010-12-21 14:08:05 Initializing Internal Event L...
7 2010-12-21 14:08:06 Initializing Topology Event L...
8 2010-12-21 14:08:07 Initializing Alarm Filtering ...
9 2010-12-21 14:08:09 Initializing Device Subgraph ...
10 2010-12-21 14:08:10 Initializing FTP service
11 2010-12-21 14:08:11 Initializing System Services

Enable the client: run client\MainClient.exe, input password: admin, click OK



3.3 Close EPON Management Software

Left click the icon at the right Conner of the PC, choose “Stop Service”

, then you will see the below interface:

Stop Server
Please input your user name and password! Note that only a user from the 'admin' group is allowed to stop the server.
User Name
administrator
Password
OK
Cancel

Input password “admin”, click “OK”. Left click the icon again, choose “ShutDown this Tool”, then the software closed.

3.4 Uninstall EPON Management Software

1. Close EPON client and server
2. Run MySQL5\DelMysqlServer.bat to uninstall the MYSQL database
3. Delete all the EPON management software files

Chapter 4 EPON Network Management Software Config

Users can use EPON SNMP software to manage and maintenance the devices directly; install and enable the device please refer to the Chapter 3.

Before config any items, please make sure the connection between the PC and the agent is correct, and configure the agent IP address and alarm address (there is default IP existed) correctly through Telnet or Console port. There is LED description refer to the connections (check table 1-1) .

4.1 Configuration Introduction

4.1.1 Login network management client

Enable the software according to 3.2, see as Figure 4-1, there is prompt about input account and password (there is default account name existed—administrator, password: admin. Click OK, enter the network management interface.

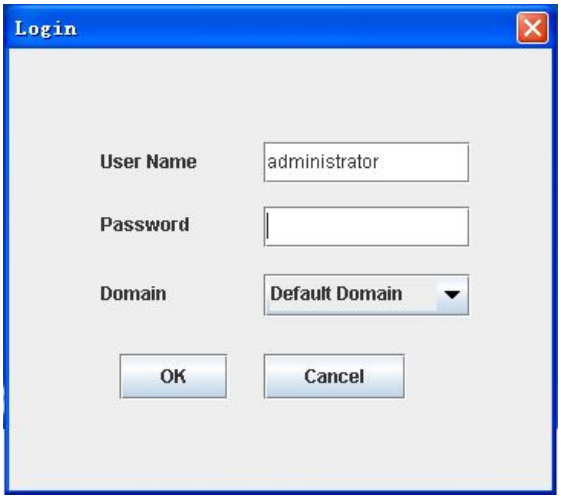


Figure 4-1 Login Interface

4.1.2 Configuration Interface Introduction

First login; see as below Figure 4-2:

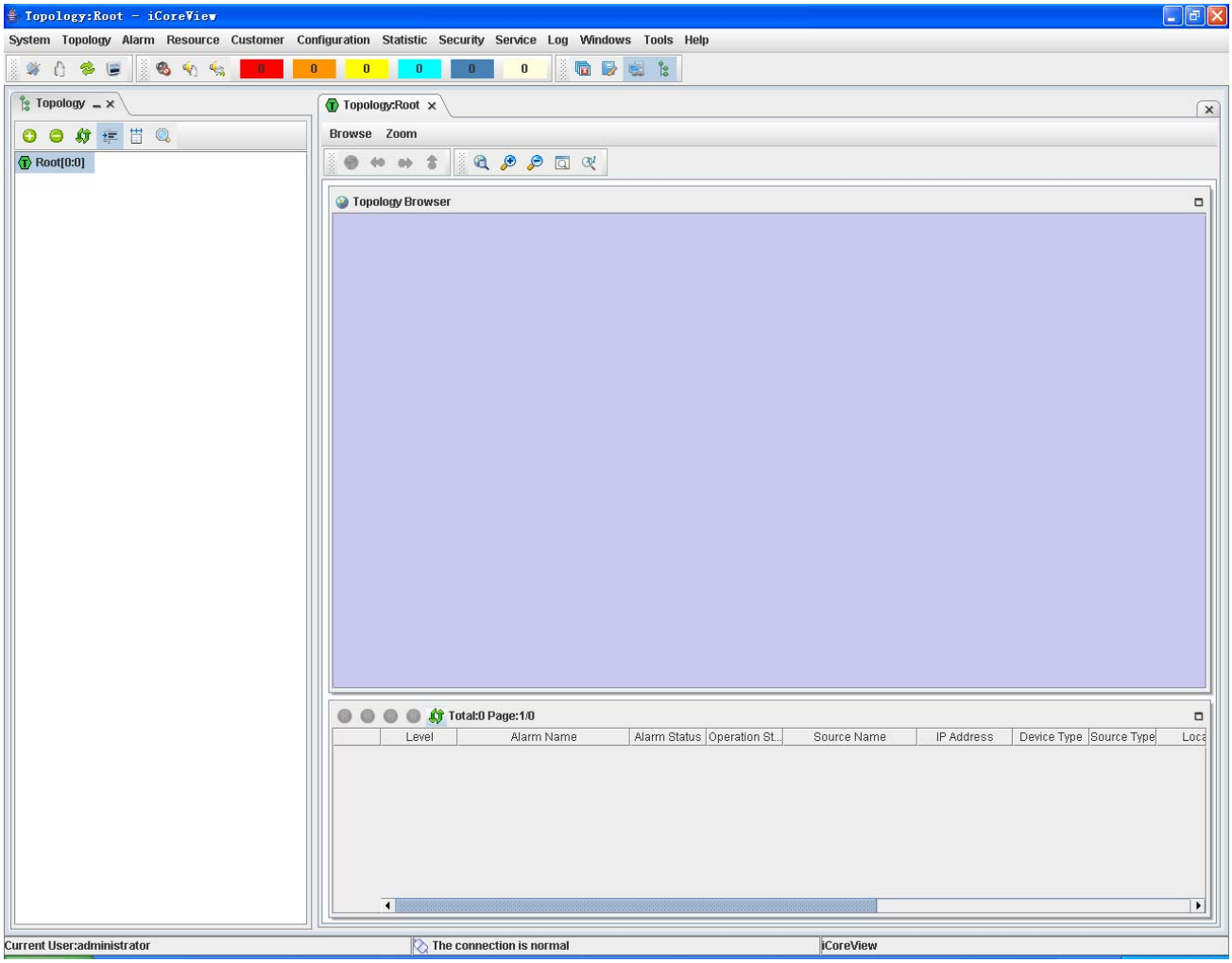


Figure 4-2 First Login

4.1.3 Change User Password

Enter the configuration page, left click the main menu【System】-->【ChangePassword】 as Figure 4-3, to change password.

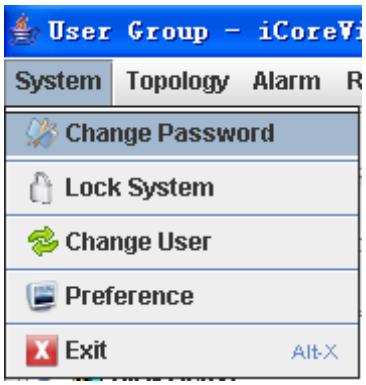


Figure 4-3 change password

Administrator can add user groups or users, delete users, change user password and distribute resource, details refer to the main menu【Help】”chapter 8”

4.2 Basic Configurations

4.2.1 Add device

After enter the Figure 4-2 interface, need to add a device node, follow as below:

In the topology browser, or choose a subnet in the topological view, right click the mouse, choose “Add Device”, see as Figure 4-4. then popup the add device dialog box as Figure 4-5.

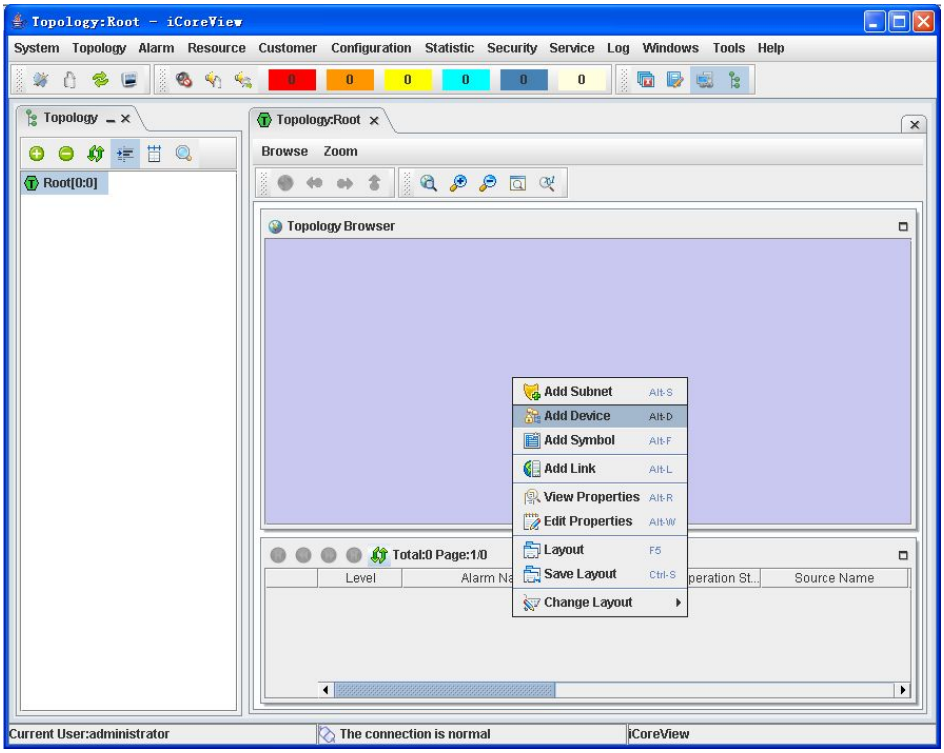


Figure 4-4 Add device

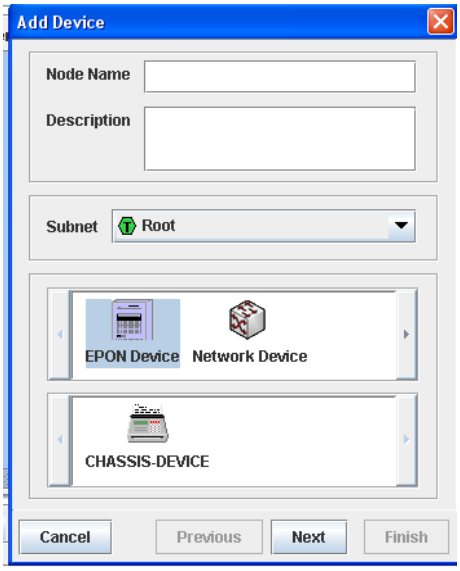


Figure 4-5

This page includes the below properties:

- Node Name: necessary. The name of the node, this name displays in the topological view.
- Node Description: optional. Descript the node, not display in the topological view.
- Subnet: necessary. The subnet the node located, default is present subnet.

Icon: necessary. The icon the node uses.

Click the EPON Device

icon, There are the manageable devices list supplied by SUN Telecom, then click the related EPON device. Here taken SUN-GE8100 as an example.

Click “Next”, enter next property editing page. As Figure 4-5.

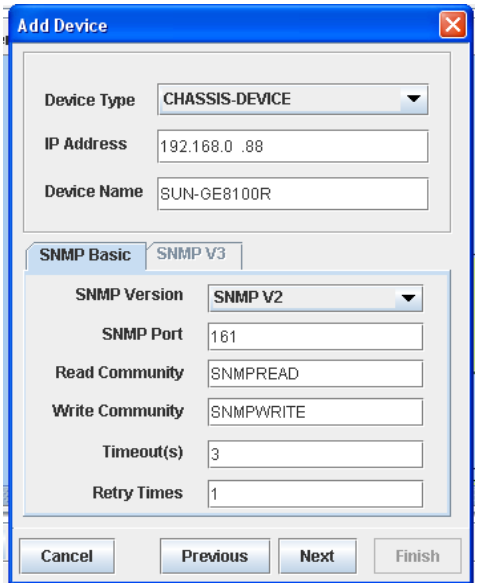


Figure 4-6

This page includes below properties:

- Device type: necessary. The types of the devices, just for display, can’t be revised.
- IP Address: necessary. Device IP addresses, default IP is 192.168.0.88, and users can change the IP and then do configurations.
- SNMP Basic: optional. SNMP management properties, includes: version, SNMP port, read and write community, time out config and retry times, there is default value at initial. When choose SNMP version V3, “SNMP V3 property” page is available, users can config V3 properties, including user name, security class, authentication protocol, authentication password, private agreement, and private password.
- Some properties in this page (SNMP version, SNMP port, read community, write community), we have config default value. User can revise it according to real environment. Users just fill the IP address is enough to use.

- After fill the properties, click “Next”, enter next property editing page, as Figure 4-6.

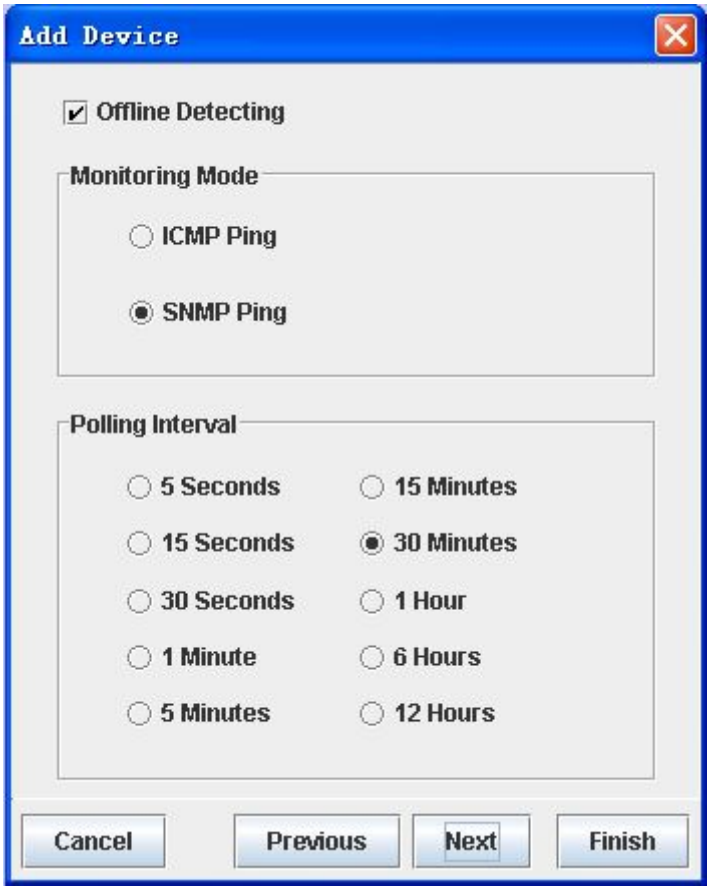


Figure 4-7

This page includes below properties:

Offline Detecting: if there is off link detecting to the devices.

Monitoring Mode: adopt which operation, There are two options: “ICMP Ping” and “SNMP Ping”.

Polling Interval: the interval time the system polling operations to devices, there are several optionas:“5 seconds”, “15 seconds”, “30 seconds”, “1 minute”, “5 minutes”, “15 minutes”, “30 minutes”, “1 hour”, “6 hour”, “12 hour”

Use default configuration is enough. If 30 minutes polling interval is too long, users can choose a short time like 5 seconds, 15 seconds or 30 seconds, the software can get the online and offline status in time.

After configure, click “Next”, and enter another property editing page, as Figure 4-7.

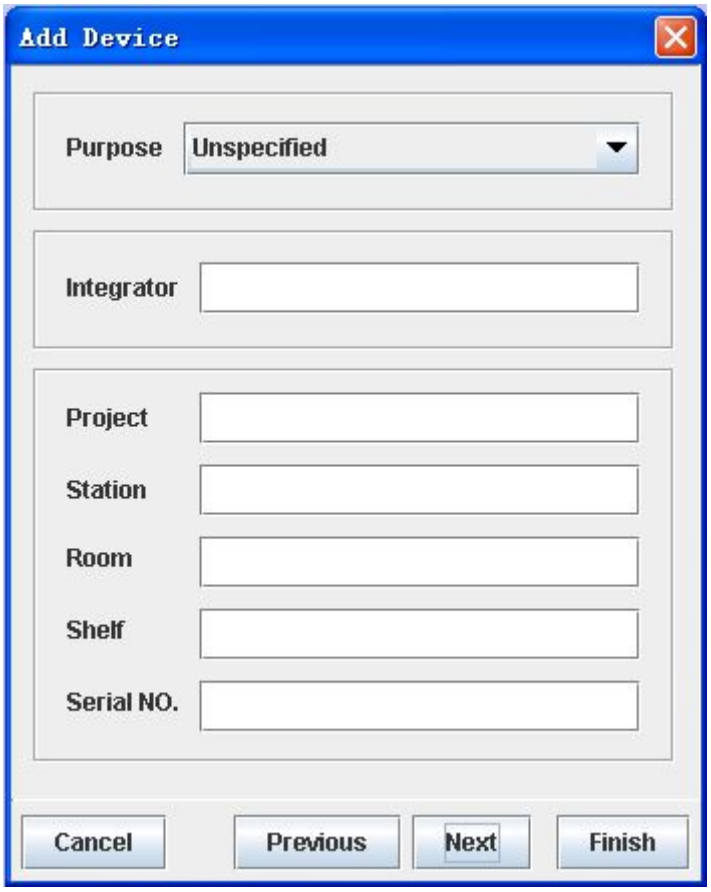


Figure 4-8

This page includes below properties:

Purpose: necessary. Identify the device is access layer device or integrated layer device;

Integrator: optional. Device integrator.

Project: optional. The project where the device use

Station: optional. The station where the device use

Room: optional. The machine room where the device use

Shelf: optional. Serial Number of the shelf.

Serial NO: optional. The device capitol serial number.

This page can use the default configuration, supporting user-defined.

After configuration, click “Next”, enter next property editing page.

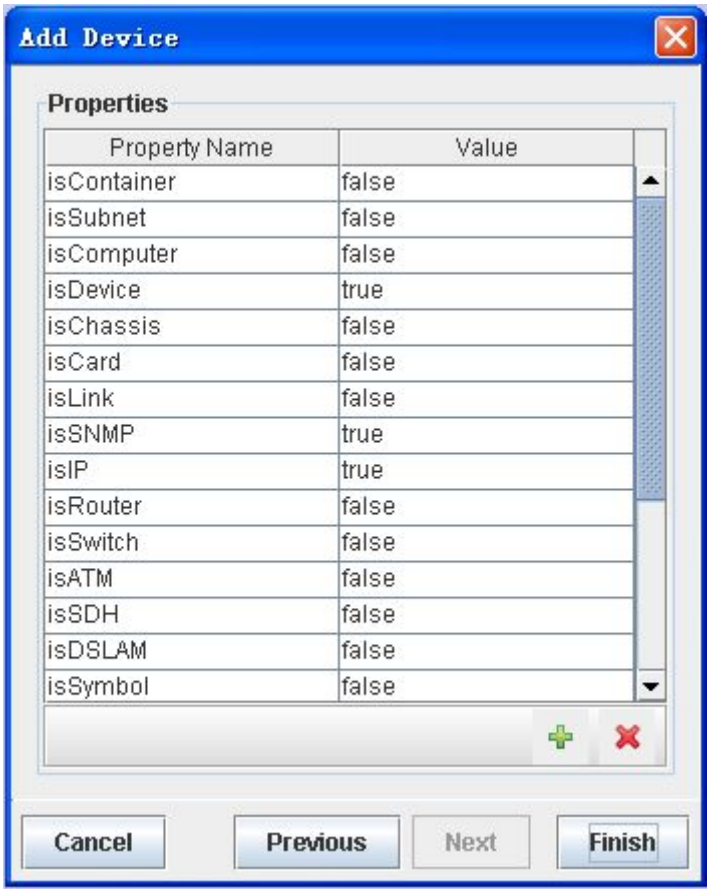


Figure 4-9

Please don't revise the property of this page, keep the default ones.

After configuration, click the "Finish" button to implement creating device node operation, if success, there is prompt

"operation is successful, Add another node now?" Choose "yes", the wizard automatically switches to the first page; choose "No", the dialog box closed.

Adding a device node

in the topological view, if the device properties filled correctly, and the device is online, the management software will collect the device basic information, and producing topological structure according to the device. The icon of the device will change from rectangle to round rectangle

in 5 seconds. Expand the left tree topological structure you can see the device topological situation.

After adding devices completed, you can revise the device properties. Right click the device icon, and choose 【Edit Properties】, as Figure 4-10.

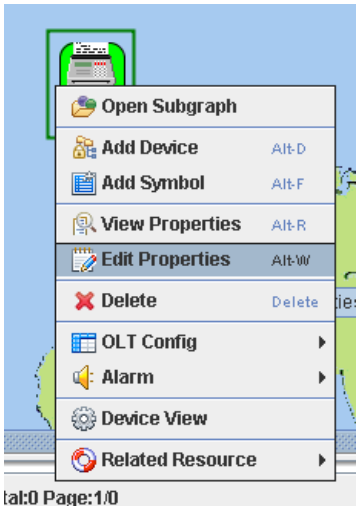


Figure 4-10

The configuration property wizard comes up. This wizard is the same with the former adding device wizard.

Users can revise the properties according the real needs.

4.2.2 Two ways to check

1. Expand the left tree topological structure, as Figure 4-11.

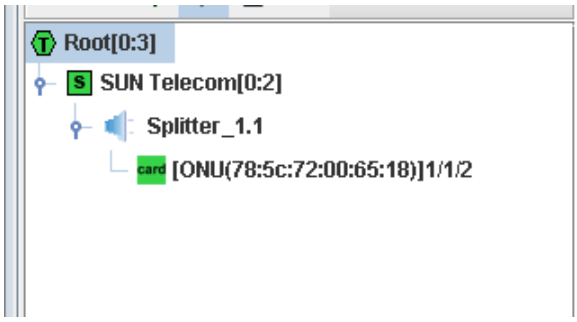


Figure 4-11

There are two registered ONUs under an OLT, if there is no ONU connects to the OLT, you can't see the topological structure. If there is ONU connected, but no topological structure, check if the ONU register successfully (ONU LLID keep lit when register successfully) .

【78;5c:72:00:65:18】 is ONU MAC address, 【4/1/1】is ONU index, 【4】represents OLT is at the fourth slot of the rack, the first【1】represents the first PON port of the OLT, the second【1】means the ONU is the first ONU under this OLT.

2. Right click the icon and choose【Open Subgraph】, check the device topological view as

Figure 4-12.

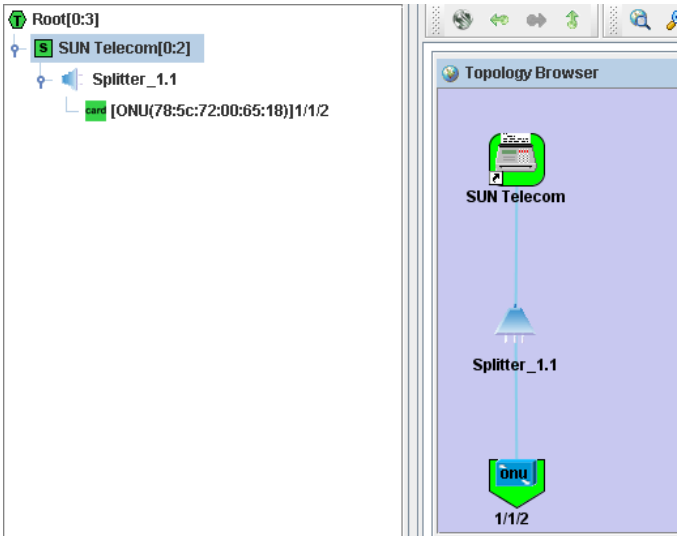


Figure 4-12

Users can revise the ONU properties (name and description information; After uses adding device, the management software will automatically produce the device topological structure, there is a default name and empty description information produces, users can edit it according to the real requirements.) . Right click the ONU icon and choose 【Edit ONU Properties】, as Figure 4-13, then users and edit the properties. When revising the ONU name, we suggest reserving the index.

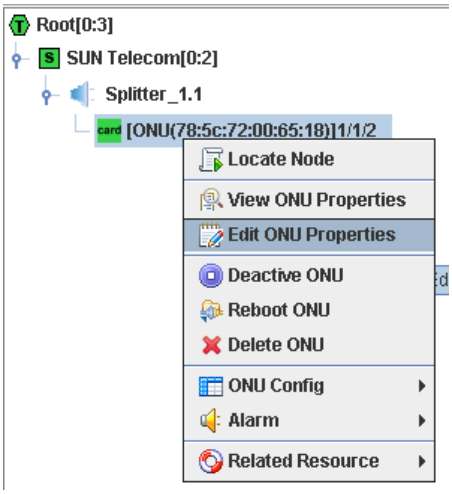


Figure 4-13

4.2.3 Update topology

The way to update the topology is to perform resource synchronization operations. Resource synchronization refer to: The status of the managed devices, cards, ports (these called resource) in the software be synchronized with the real devices status. When receiving TRAP alarm host IP is set as the

server IP address (the way to set the EPON device receiving TRAP alarm host IP, refer to the chapter 2.2.2 example), the server can update the device real-time status according to the TRAP alarm information from the devices. This reflection costs some time, manual operation supported to implement this update operation.

Check the Figure 4-14, right click the devices need to configure synchronization SUN Telecom[0:2] , and choose 【Related Resource】-->【Synchronize】. The system performs this operation costs some time (the need time depends on the network status and the devices, usually 3 to 8 seconds)

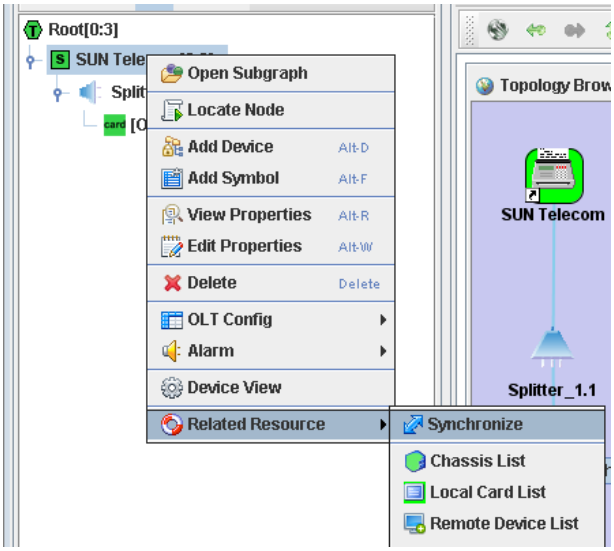


Figure 4-14

4.2.4 Check the Device Rack

Double click SUN Telecom[0:2] or right click SUN Telecom[0:2] , and choose【Device View】 to check the device rack status, as Figure 4-15.

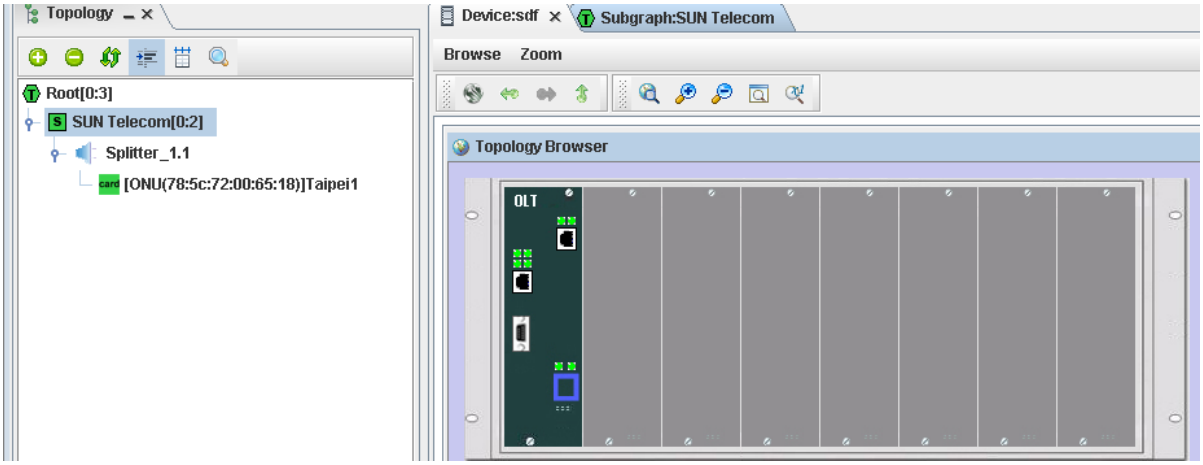


Figure 4-15

4.2.5 Description of the Device Icon

If there is no mark on the icon like

,

,
,

, it resents the devices work normal, OLT and ONU are online.

If there is "！" such as

,
,

, it means there is alarm on this device.

If there is red "×" such as

,
,

, it means the device offline.

If there is white "×" such as

, it means ONU was refused to access.

4.2.6 Alarm Management

Telnet to the agent card, set the alarm IP address as the PC IP address (where the server is), configure as the introduction in Chapter 2.2.

For every type of alarm event, iCoreView system marks them with a level to show it severity. View NNM provides 5 levels in all, from the most serious to the least serious, they are：

Critical Alarm (Critical): The highest level alarm, which will interrupt the communication. Marked in red:
.

Major Alarm (Major): Service continues while the performance declined considerably and affected the operation. Marked in orange:

Minor Alarm (Minor) ： Alarm event occurs but do not affect the operation of the service. Marked in yellow:

Warn Alarm (Warn) ： The service is operating in order. Only an ordinary problem occurred. Marked in blue:

Unknown Alarm (Unknown): Alarm events that can not be recognized. Marked in light grey.

Details introduction please refer to the main menu【Help】Chapter 5.

4.3 OLT Configuration Management

4.3.1 OLT Basic Information Management

Right click the device icon SUN Telecom[0:2] and choose【OLT Config】-->【Basic Manipulation Classic Info】--> 【Classic Info】, then popup the OLT SNMP config interface, as Figure 4-16.

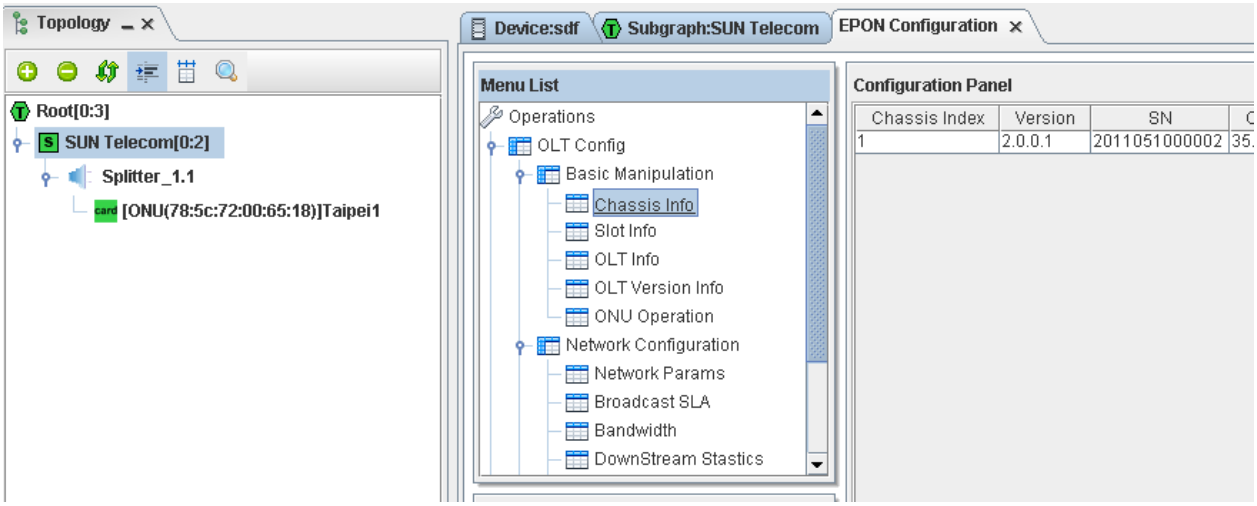


Figure 4-16

Left EPON configuration page is a tree function list, below the list are the devices it support, right side is a configuration panel to display the device information and the configuration options.

Example:

Check or revise the OLT【Bridge Parameter】

Choose 【OLT Config】--> 【Bridge】 --> 【Bridge Parameter】, right side will display the parameter as Figure 4-15. If there is no information for【Bridge Parameter】, that means it didn't point to the OLT in the left device list. Click an OLT in the list as Figure 4-17.

Figure 4-17

Click the 【Bridge Parameter】 again, the right list will display the OLT bridge parameters, as Figure 4-18.To revise the bridge parameter, needs to click the row firstly, then click【Modify】, revise the parameters in the popup dialog box, after revise, click apply. As Figure 4-19.

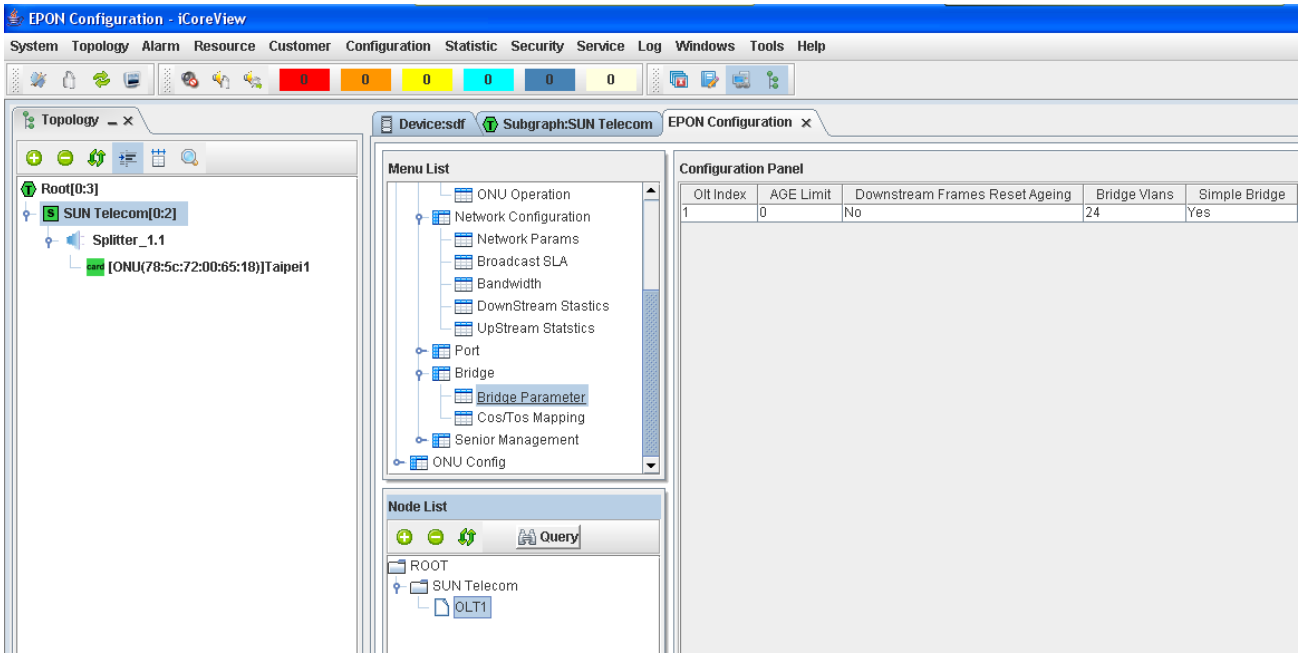


Figure 4-18

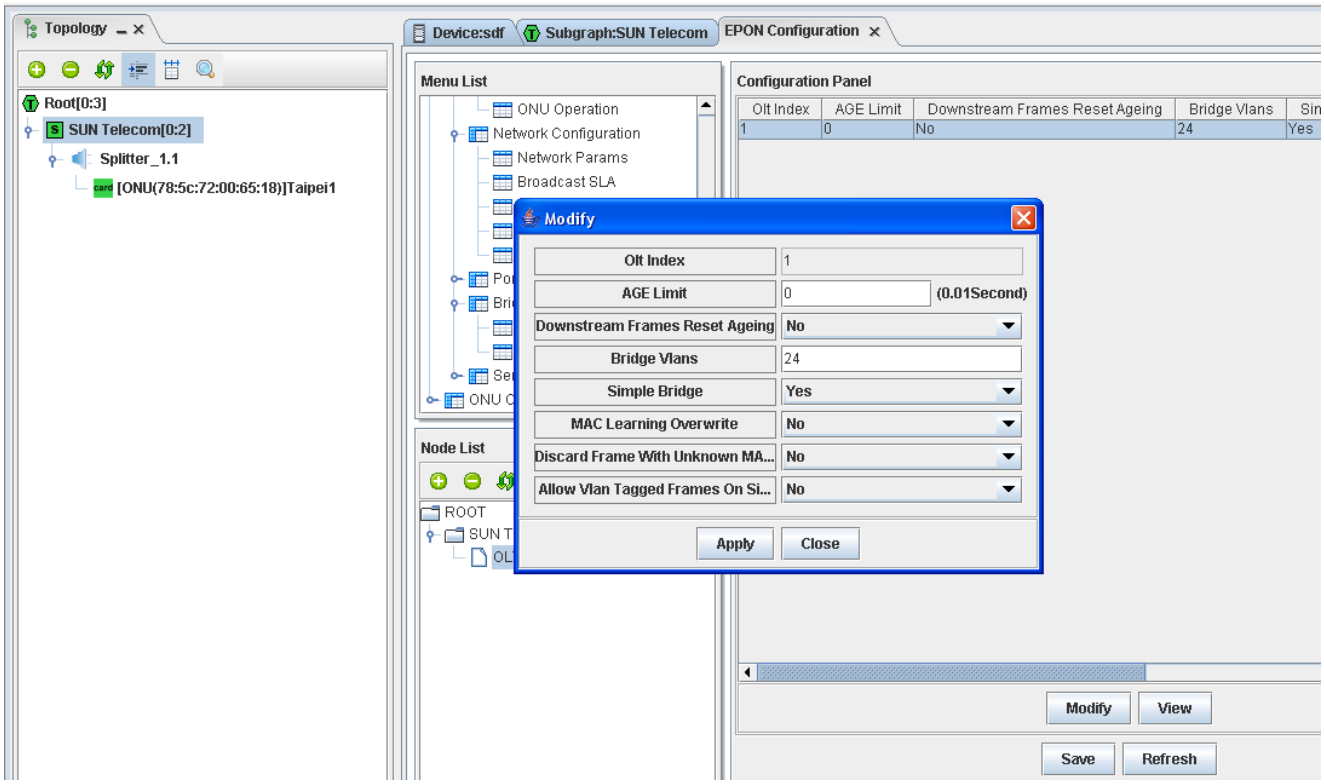


Figure 4-19

OLT basic function information description, as table 4-1.

Menu	Function Description
【class Info】	Check the rack information, includes rack temperature, power status, fan speed
【Slot Info】	Check the slots information, support to implement restore and reboot operations to the OLT in the slots.
【OLT Info】	Set the authentication mode to ONU

【OLT Version Info】	Check OLT software version, hardware version
【ONU Operation】	Check the ONU status under the OLT, implement add, delete and revise operations to the ONU

Table 4-1

【Slot Info】

This menu includes two functions:

Restore OLT to factory settings; when OLT can't communicate to all the ONUs, try this operation;

Reboot OLT;

Note: After restore OLT to factory settings, need to reboot OLT, then operation effects.

【OLT Info】

Set the registration mode to ONU; The authentication mode includes: accession, MAC and sn, default one is accession. There are three operations under the three modes: Undefined, Allow and Deny, these can manage the ONU access.

Accession: under this mode, ONU can register normally and display in the topological view. Choose Deny operation, ONU can't communicates with OLT; choose Undefined or Allow, ONU can communicate with OLT; default is Undefined, when new ONU access, it can communicate with OLT.

Mac: under this mode, ONU can register normally and display in the topological view. Choose Undefined or Allow, ONU can't communicate with OLT; default is Undefined, when new ONU access, it can't communicate with OLT.

Sn: this mode has no effect.

【ONU Operation】

Set ONU access mode, there are three modes: Undefined, Allow and Deny, as Figure 4-20. Users can config according to real requirements.

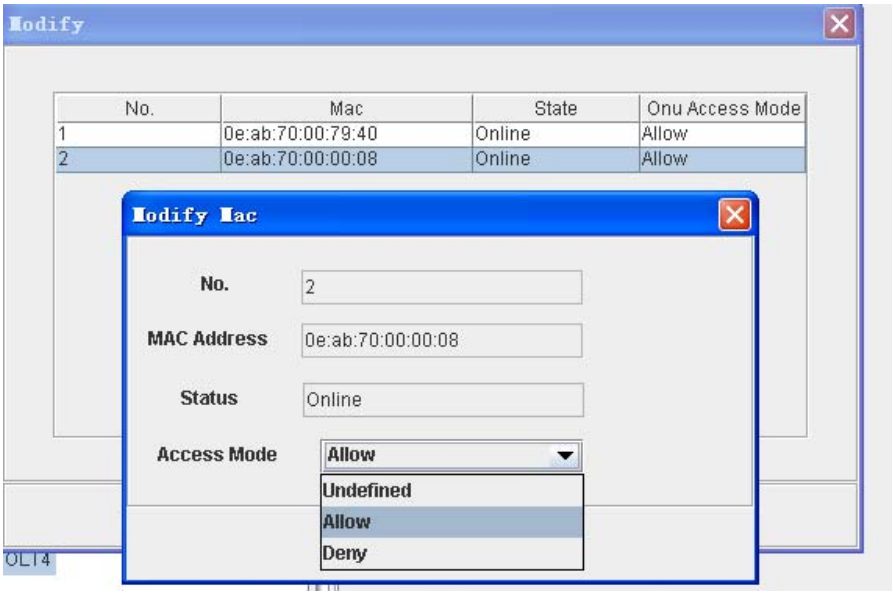


Figure 4-20

Users can config ONU in the tree topology, as Figure 4-21.

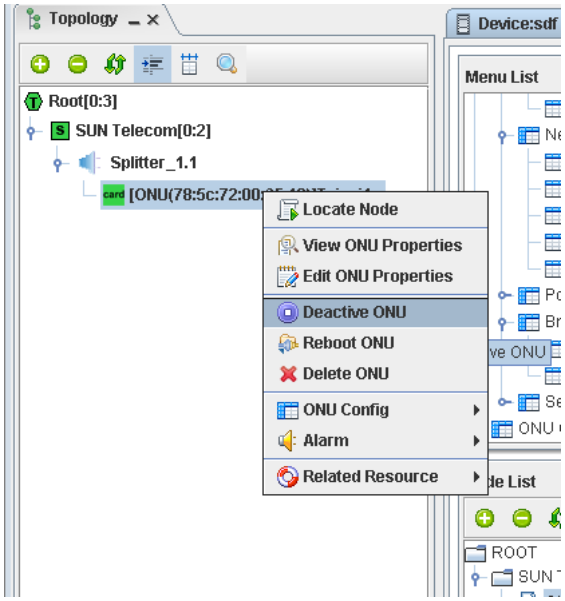


Figure 4-21

Right click ONU, choose【Deactive ONU】, the access mode changes to Deny, communication between ONU and OLT break off. If choose【Active ONU】, ONU access mode changes to Allow, ONU communicate normally with OLT, as Figure 4-22

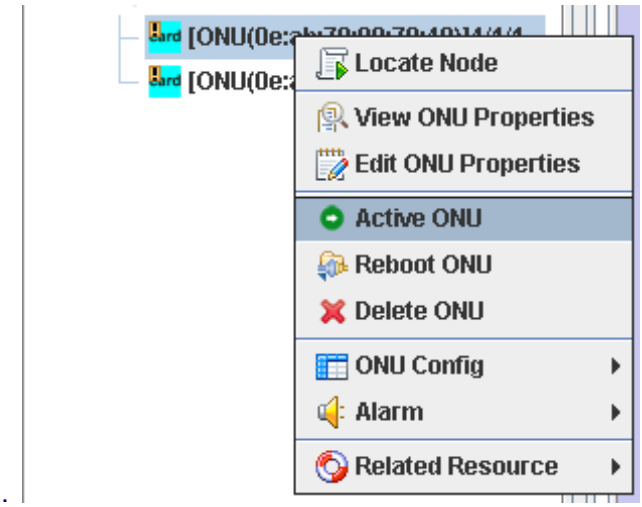


Figure 4-22

4.3.2 OLT Config

Click OLT, (【OLT Config】-->【Network Configuration】), config menu as Figure 4-23, function description as Table 4-2.

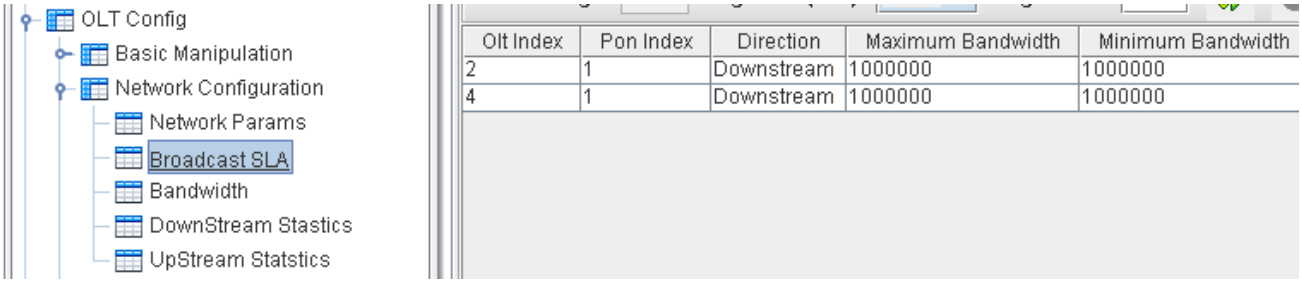
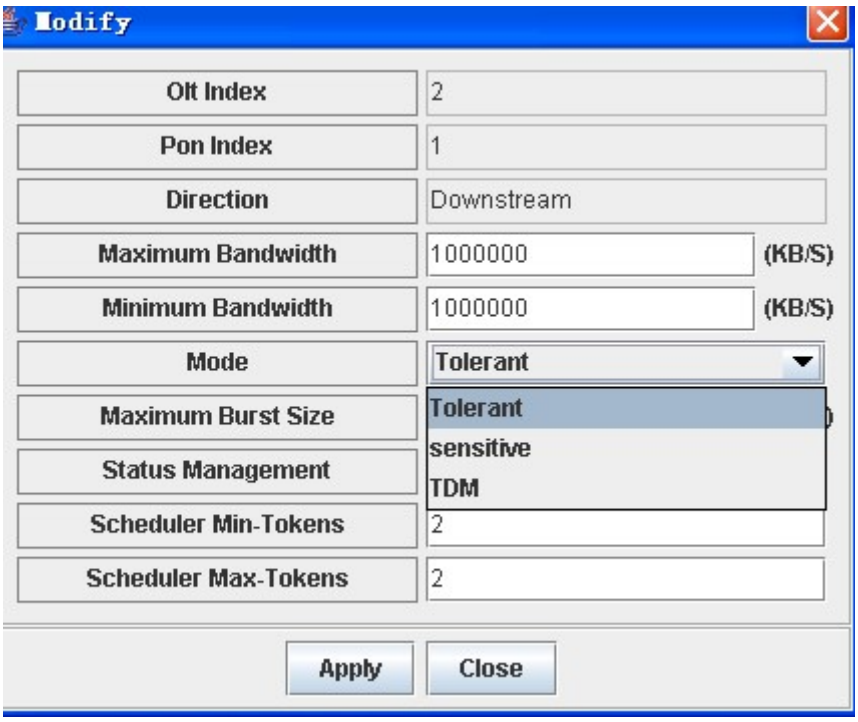


Figure 4-23

Menu	Function Description
【Network Params】	Revise the VLAN Ethernet type passing through OLT (suggest use the default value 8100), add tags to uplink and downlink (suggest not config this)
【Broadcast SLA】	Config the OLT SLA downlink broadcast bandwidth
【Bandwidth】	Config the maximum upstream and downstream bandwidth of OLT PON
【DownStream Stastics】	Check the OLT downstream spastics
【UpStream Stastics】	Check the OLT upstream stastics

Table 4-2

【Broadcast SLA】detail functions refer to table 4-3.



Menu	Function Description
【Maximum Bandwidth】	Maximum data transmission rate
【Minimum Bandwidth】	Minimum data transmission rate
【Mode】	Sensitive: distribute a fixed bandwidth to the link, let the link data queue empty Tolerant: only when the link data queue is empty, the bandwidth allocated to the link is virtual value (recommend this mode) TDM: time division multiplexing, supports to set the size of round time slice
【Maximum Burst Size】	Maximum bandwidth reserved for burse flow

Table 4-3

4.3.3 OLT Uplink Port Config

【OLT Config】-->【Port】-->【Uplink Port】, config as Figure 4-24.

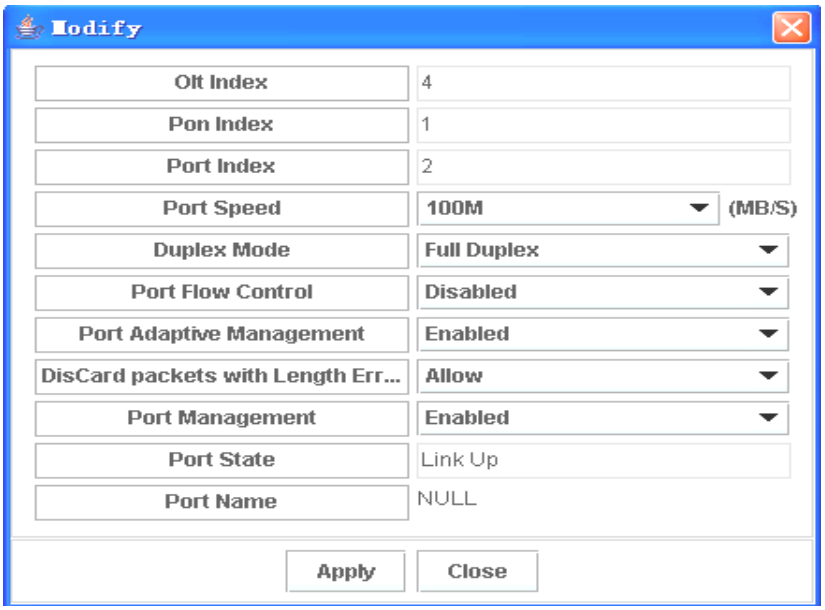


Figure 4-24

Port speed: set port speed

Duplex Mode: set port working mode to full duplex or half duplex

Flow Control: enable or close 802.1x flow control

Port Adaptive Management: choose port adaptive mode, default is enable

Discard Packets with Length Errors: such as small data packet

Port Management: close or open the port, close the port, this port not work

Note: to config Port speed or Duplex Mode, must Disabled Port Adaptive Management firstly.

4.3.4 OLT Bridge Parameter Config

【OLT Config】-->【Bridge】, config menu as below Figure 4-25。

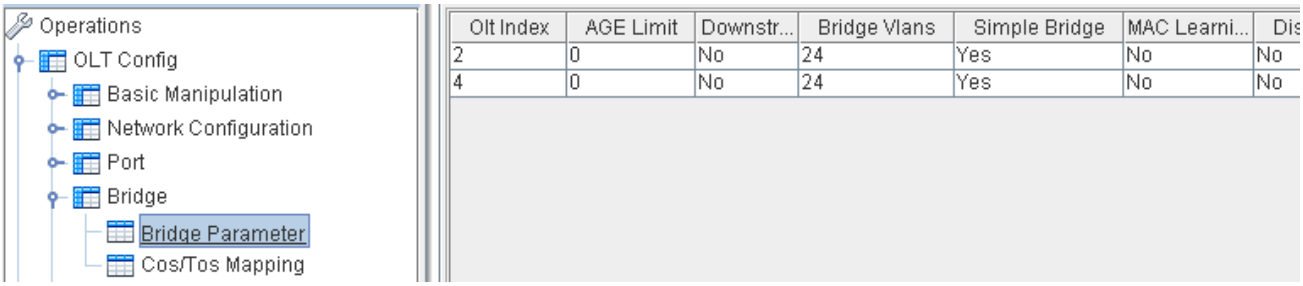


Figure 4-25

【Bridge Parameter】

AGE Limit: set OLT aging time, default is no configuration

Downstream Frame ResetAging: Reset aging to downstream frame, this configuration effects to all the MAC table entries.

Simple Bridge: default is enabled

MAC Learning Overwrite: overwrite the entries in the MAC address table

Discard Unknown MAC Addresses: discard unknown MAC, not flood

Allow VLAN Tagged Frames on Simple Bridge: allow data frame with VLAN transmitting in Simple Bridged link, default config is not enabled; to config VLAN, need to enable this function first.

4.3.5 OLT Senior Management Config

【OLT Config】-->【Senior Management】, introduction as table 4-4.

Menu	Function Description
【Dynamic MAC】	Check the learned Dynamic MAC from OLT link
【Static MAC】	Config the Static MAC bond to OLT link

Table 4-4

4.4 ONU Config

SUN-GE8200 series ONU includes: SUN-GE8200 one port 100M ONU, SUN-GE8200G one port Gigabit ONU, SUN-GE8200D two ports with 100M and 1000M ONU, SUN-GE8204 four 100M ports ONU, SUN-GE8208 eight 100M ports ONU. In the management system, there are two ports for SUN-GE8200G ONU and SUN-GE8200 ONU. SUN-GE8200G port correspond to the port index 1, port 2 is not used; SUN-GE8200 port correspond to port index 2, port 1 is not used; SUN-GE8200D GE port correspond to port index 1, FE port correspond to port index 2.

4.4.1 ONU Link Management

【ONU Config】-->【Link】, config the logical link between OLT and ONU, suggest not config.

4.4.2 ONU Hardware Config

As Figure 4-26.

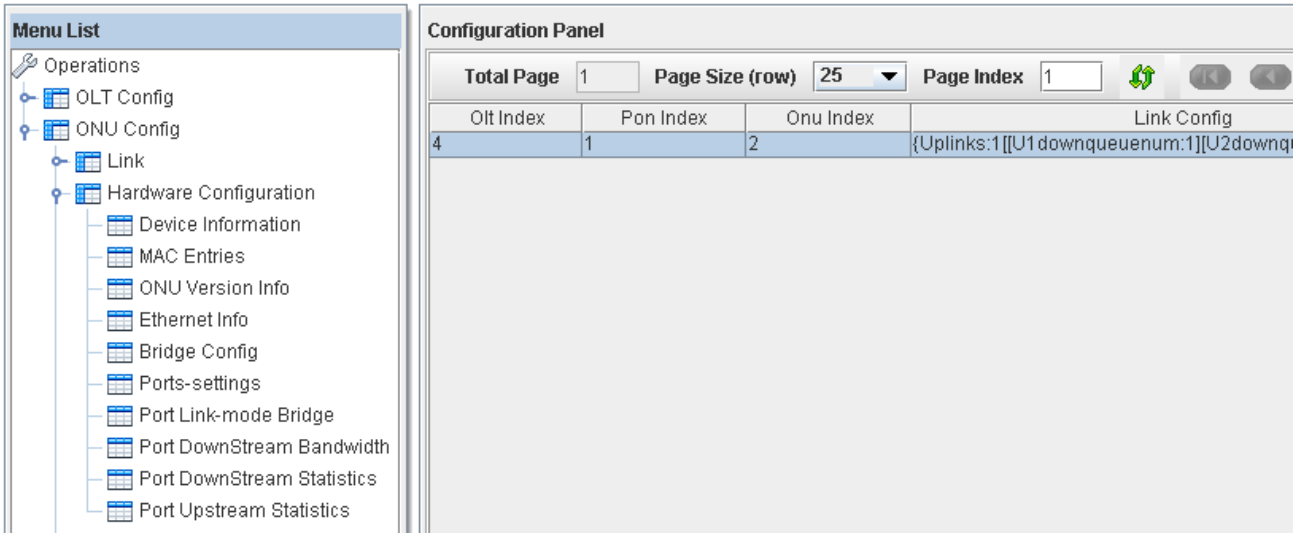


Figure 4-26

【ONU Config】-->【Hardware】, details as Figure 4-5

Menu	Function Description
【Device Information】	Reset ONU to factory settings, reboot, set ONU access mode
【MAC Entries】	Check ONU port learning MAC address, and clear the learned MAC address
【ONU Version Info】	Check ONU chipset, version
【Ethernet Info】	Revise the VLAN Ethernet type passing ONU (recommend to use the default config 8100), add tag to upstream and downstream (not suggest to config)
【Bridge Config】	Only SUN-GE8204 and SUN-GE8208 ONU support this function. Config THE local exchange function and MAC limitation function to mutli-port ONU
【Port-settings】	Config the ONU ports
【PortLink-mode Bridge】	Port bridge config
【Port DownStream Bandwidth】	Port downstream bandwidth config
【Port DownStream Statistics】	Port downstream statistics
【Port UpStream Statistics】	Port upstream statistics

Table 4-5

【Bridge Config】 as Figure 4-27.

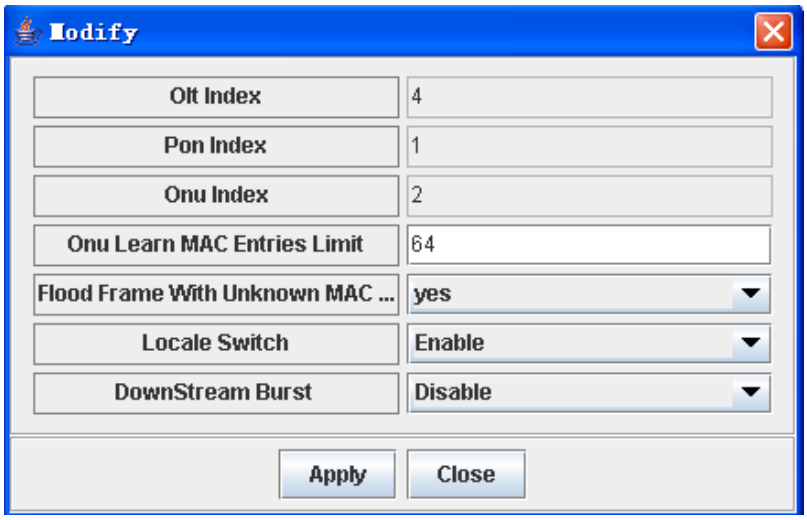


Figure 4-27

ONU Learn MAC Entries Limit: limit the MAC address number of devices connected to the ONU, if not limit, config 0.

Flood Frame With Unknown MAC: choose YES, expand the unknown data frame broadcast of destination MAC to all the ports; choose NO, discard the unknown data frame of destination MAC.

Locale Switch: config local switch function of multi-port ONUs, choose Enable, each port is not isolated; choose Disable, each port is isolated.

DownStream Burs: open or close downstream Burst function.

【Port-settings】as Figure 4-28.

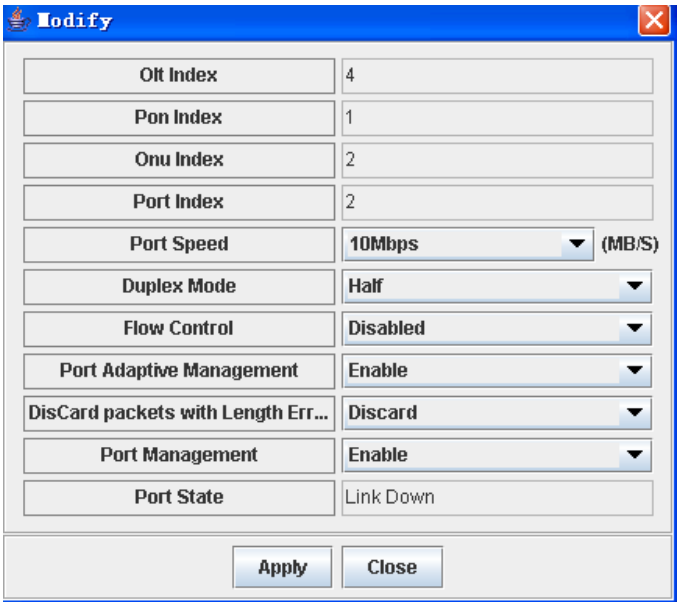


Figure 4-28

Port speed: config port speed

Duplex Mode: set port working mode full duplex or half duplex

Flow Control: enable or close 802.1x flow control

Port Adaptive Management: default is enable

Discard Packets with Length Errors: such as small data packets

Port Management: close or open the port, when close, the port can't work

Note: to config Port speed and Duplex Mode, must Disabled Port Adaptive Management.

【PortLink-mode Bridge】 as Figure 4-29.

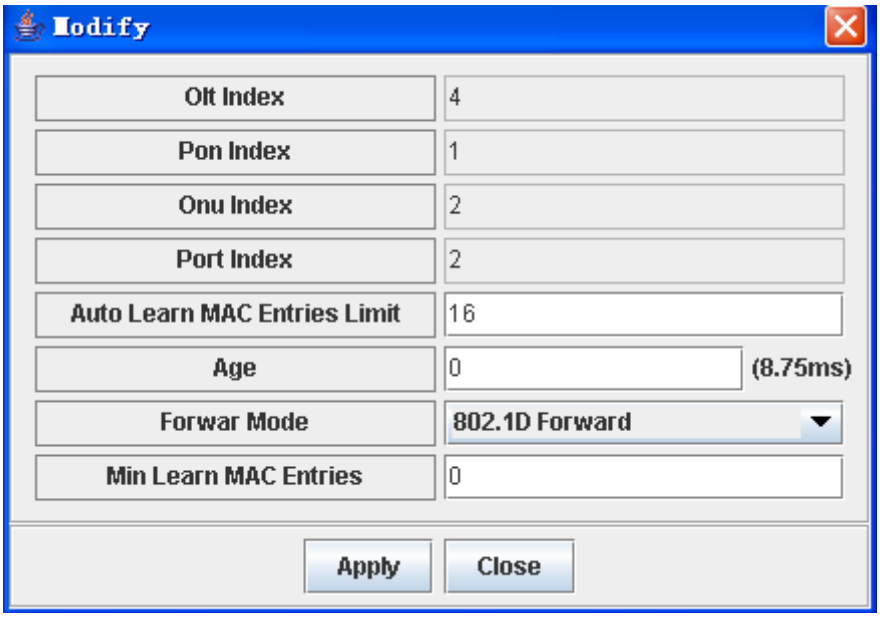


Figure 4-29

Auto Learn MAC Entries Limit: maximum 64, if not limit, config it to 0.

Age: config the MAC aging time, maximum 32768; minimum 0, means not aging.

Forway Mode: port data packets forward mode, there is 802.1d Forwarding and MAC Access Control two modes. 802.1d Forwarding actions includes: learn MAC, unicast the known MAC data frame, flood unknown MAC frame; different with 802.1d Forwarding, under MAC Access Control mode, only after ONU learned the source MAC of upstream data packet, it will forward this data packet, this character also called Dropped Unit Learned.

Min Guaranteed MAC Learning Limit: config the minimum entries of MAC learning

4.4.3 ONU Config

【ONU Config】-->【Ethernet Service】 as Figure 4-30, function description as Table 4-6.

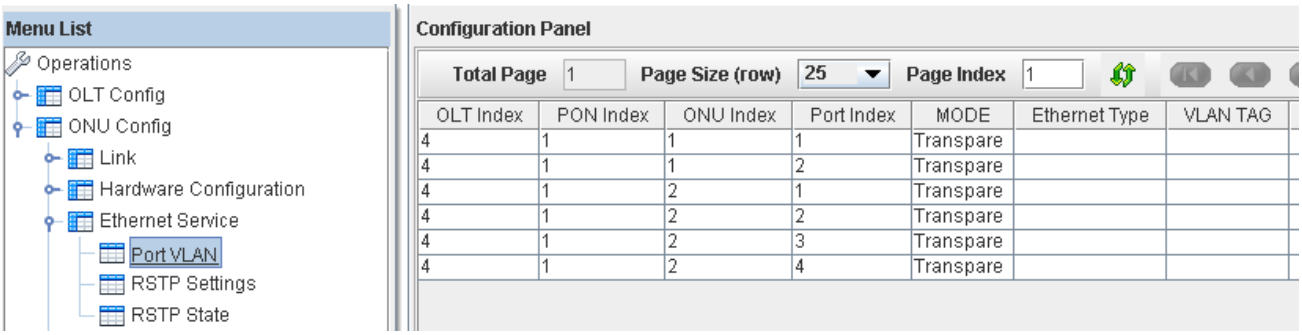


Figure 4-30

Menu	Function Description
【Port VLAN】	Config ONU port VLAN
【RSTP Settings】	RSTP Setting
【RSTP State】	Check RSTP state

Table 4-6

【Port VLAN】

ONU VLAN function support three VLAN modes":

Transparent, Tag and Translated mode, details as Table 4-7, 4-8, 4-9.

Direction	Ethernet packet with or not with VID	Treatment way
Upstream	With VLAN VID	No change to Ethernet packet, reserve the VLAN TAG, forward
	No VLAN VID	No change to Ethernet packet, forward
Downstream	With VLAN VID	No change to Ethernet packet, reserve the VLAN TAG, forward
	No VLAN VID	No change to Ethernet packet, forward

Table 4-7 Treatment way to the data packet under Transparent mode

Direction	Ethernet packet with or not with VID	Treatment way
Upstream	With VLAN VID	Discard
	No VLAN VID	Add the configed VLAN VID, forward
Downstream	With VLAN VID	Forward to the corresponding port according to the VID

		And divest the VID, if the VID is unequal to the configured ID, discard the packet.
	No VLAN VID	Discard

Table 4-8 Treatment way to the data packet under Tag mode

Direction	Ethernet packet with or not with VID	Treatment way
Upstream	With VLAN VID	If the original VID is the same with forward VID (in tag), divest this VID, add new tag (Translated Tag) and forward; if different, discard
	No VLAN VID	Add default VID (VLAN Tag) and forward
Downstream	With VLAN VID	If the original VID is the same with forward VID (in tag), divest the VID, add new tag (In Tag) and forward; if different, discard
	No VLAN tag	Discard

Table 4-9 Treatment way to the data packet under Translated mode

Example: here need to add VLAN VID to the upstream data entering ONU port, and divest the downstream corresponding VLAN VID, VID is 100.

Choose ONU Port Type as TAG, input 8100 in the TPID column (TPID is Ethernet type, common is 8100), input the VID 100 in the VLAN Tag column, as Figure 4-31.

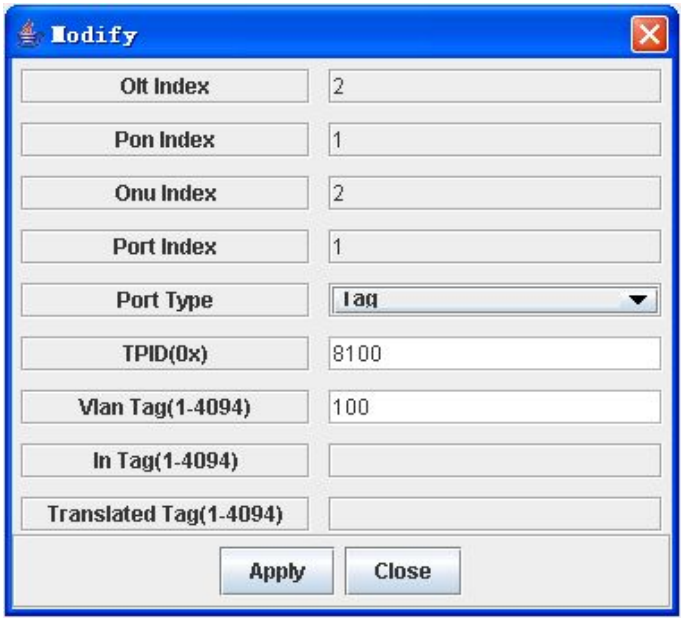


Figure 4-31

Example: upstream, transfer data packet with VLAN VID 20 to VID 30; downstream, transfer the data

packet with VLAN VID 30 to VID 20.

Choose ONU Port Type as Translated, input Choose ONU Port Type as TAG, input 8100 in the TPID column (TPID is Ethernet type, common is 8100), transfer the VID 20 to VID 30, input arbitrary value in the VLAN Tag column, then ONU will add this VID to the packet with VID, as Figure 4-32

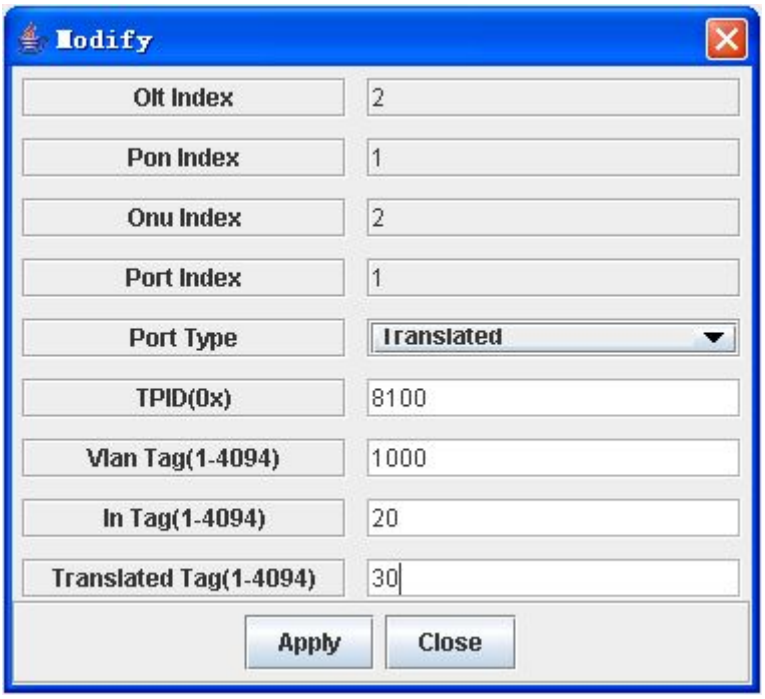


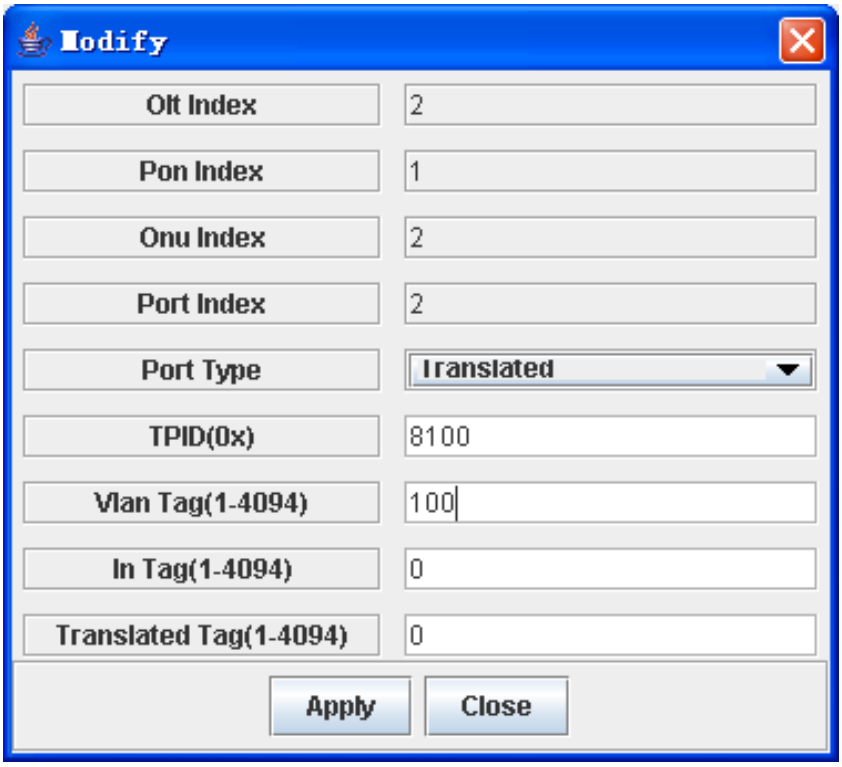
Figure 4--32

Note: if VLAN mode can't switch directly between TAG mode and Translated mode, must config VLAN mode to Transparent mode and then config new mode; under same modes, to change VID, also need to config VLAN mode to Transparent, then config new mode, reconfigure VID, or the config is not successful.

To the ONU SUN-GE8200 and SUN-GE8200D 100M port (port index is 2), TAG mode is not available, and Translated mode can be used to substitute TAG.

Example:

Here need to add VLAN ID to upstream data, and divest downstream corresponding VLAN VID, VID is 100. Choose Translated mode (it should choose TAG mode, tag mode is not available to index 2 port, Translated mode can implement the same function) Configure as 4-33.



Config 4-33

ONU will add VID 100 tag to the data packet without VID, and discard the data packet with VID.

【RSTP Settings】 as Figure 4-44

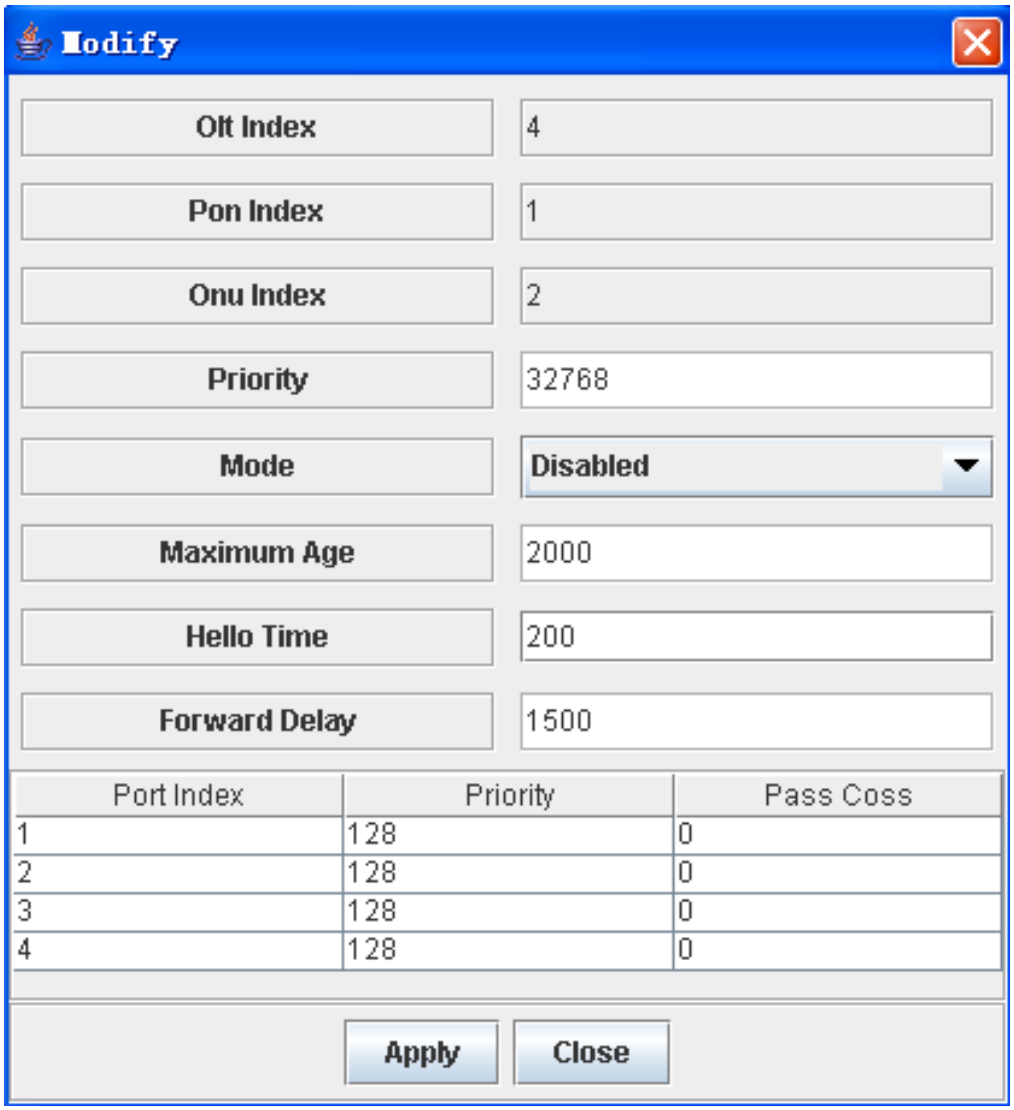


Figure 4-44

ONU supports RSTP (Rapid Spanning Tree Protocol) function. It is simple to config RSTP function.

Under default mode, choose Enable in the Mode options under config panel.

Config parameters in the RSTP config panel:

Priority: the size of the priority decides if this network bridge can be taken as root bridge; The small one can be chosen as root, if all the priority adopts the same value in the whole switch network, the bridge with smallest MAC can be chosen as root. Under RSTP mode, to config the network bridge priority will cause the STP recount. Range is 0-65535, default 32768.

Mode: this options supports to enable, close or transparent RSTP function.

Maximum Age: config the aging time. If this value is too small, the spanning tree counts frequently, this will covers much resource; if this value is too large, it will not find the link faults timely. According to the real network condition, we suggest to adopt the default value, range 6—40s, default is 20s.

Hello Time: internal time to send config information. If too small, the network bridge will send the information frequently, cause high load to the network and CPU; too large, network bridge will take link packet loss as link fault, cause the spanning tree recount. Suggest to use the default value, rage 1—10s, default is 2s.

Forward Delay: the status forward mechanism spanning tree adopts. RSTP defines three port statuses: Discarding, Learning and Forwarding. Forward Delay occurs under Discarding and Learning status. If this value too small, it will lead to temporary redundant path; if too large, network will can't connect in long time. Suggest to use default value, range is 4—30s, default is 15s.

The three time parameters of root bridge Hello Time, Forward Delay and Max Age should apply to the below formula:

2* (ForwardDelay – 1s) >= MaxAge >= 2* (HelloTime + 1s)

Or the network will vibrate frequently.

Port Priority: port priority is an important matter to choose root port. Under same condition, small value will be the switch root port. If all the Ethernet port adopts same priority parameter, the range of the priority depends on the port index. Change priority will lead to the spanning tree recount, range is 0—255, default is 128.

Path Cost: related to link speed, the high the port link speed, the low to configure this parameter, STP can count the current Ethernet port path overhead.

【RSTP State】

Enable RSTP, the whole spanning tree status can check in the【State】table, as Figure 4-45.

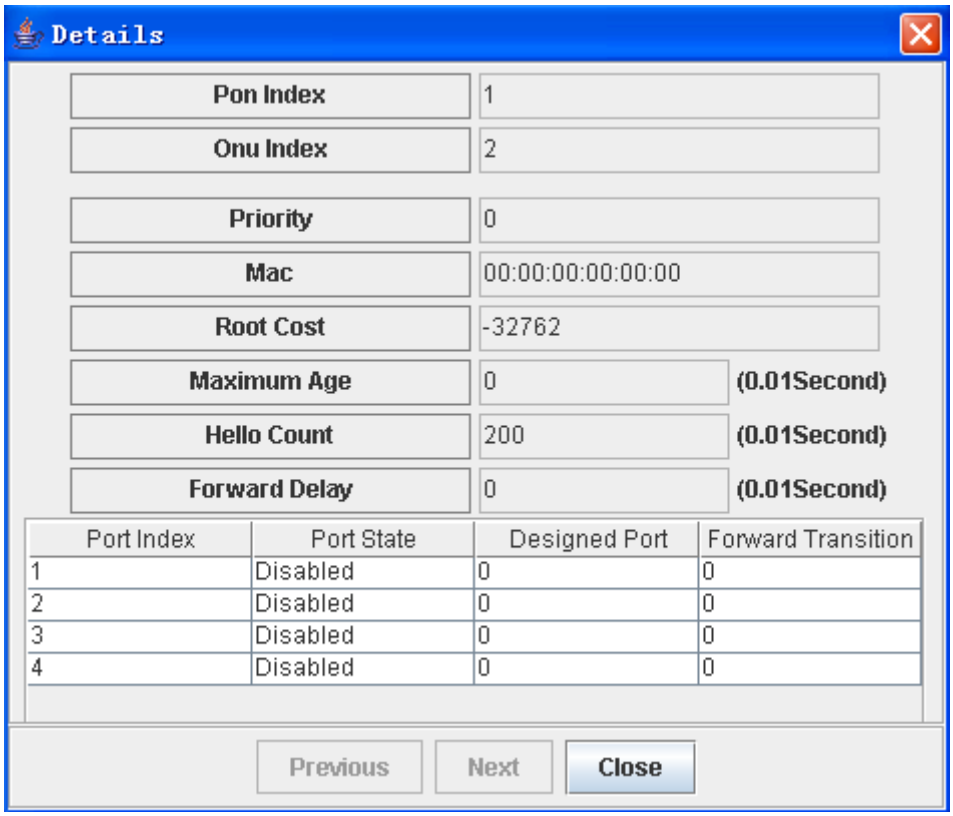


Figure 4-45

4.4.4 ONU 802.1x Management

【ONU Config】-->【802.1x】, not available at present.

SHANGHAI SUN TELECOMMUNICATION CO., LTD.
5F/No. 8 Guanshengyuan Rd., Xuhui District, Shanghai 200235, China
Tel: +86 21 54481280 Fax: +86 21 54481285
E-mail: sales@suntelecommunication.cn
http://www.suntelecommunication.cn/
http://www.suntelecom.com.tw/